

REMARKS

Status of Claims

Claims 18 and 21-38 are pending and are indicated to be allowable if amended to overcome rejections under 35 USC §112. In this Office action reply, claims 39 and 40 have been added; claims 18-29, and 33-38 have been amended.

Support for the subject matter added to claim 18 ("relative to the central optical axis of the optical element ") can found in paragraph 0040 of the specification, and FIG. 2 of the drawings of the instant application. Support for the subject matter of newly added claim 40 can be found in claim 18.

Objection to the Drawings

In item 3 on page 3 of the above-identified Office Action, the drawings have been objected to as not showing every feature of the invention specified in the claims under 37 CFR 1.83(a), and more specifically:

Claim 18

The "a carrier" in line 2, the "at least one area with non-functional or missing LEDs" in lines 6-7, and the "vertical angle of beam spread φ of the headlight is less than 5° and the horizontal angle of beam spread φ of the vehicle headlight lies in the range of less than 20°"

In response, Applicants submit new Fig. 4 showing the LEDs provided on carrier 8.

The non-functioning LEDs are shown in in Fig. 3, and are shown more clearly in new Figs 5A and 5B, being represented by broken lines.

Regarding beam spread φ , the non-conical shape of the beam emitted from the lens 2 is determined by the pattern of LEDs on the other side of the lens. A pattern of LEDs that is wide and not high will produce a beam that is wide and not high. This relation between LEDs and φ is illustrated in Fig. 2 and explained in paragraph [0036]:

A preferred embodiment of an asymmetric array 5 with a width of 8.7 mm and a length of 36.4 mm leads to a spacing of the array 5 from the center axis of the lens

of 50 mm at corresponding focal width f of the lens 2 to an angle of radiated beam ϕ in the horizontal direction to an approximately 20° and a vertical angle of radiated beam ϕ of approximately 5°.

Claim 21

The "an optically transparent material is cast into the LED-module"

New FIG. 4 shows an optically transparent material (10) cast into the LED-module.

Claim 18

The "hard wired together" or "hard circuit"

New FIG. 4 shows "a carrier" (8) and "hard wired together" or "hard circuit" (14).

Claim 23

The "LED-module in a hexagonal, quadratic or square pattern"

New FIG. 5A shows a LED-module (3) arranged in a hexagonal pattern.

New FIG. 5B shows a LED-module (3) arranged in a quadratic or square pattern.

Claim 26

The "a part of the LED-chip is provided with only IR emitting and another part with visible light emitting LEDs"

New FIG. 6A shows a LED-module (3) wherein the IR and the visible light emitting LEDs are arranged alternating in the asymmetric group arrangement.

Claim 27

The "these IR and visible LEDs are arranged alternating in the asymmetric ray"

New FIG. 6A shows a LED-module (3) wherein the IR and the visible light emitting LEDs are arranged alternating in the asymmetric group arrangement

Claim 28

The "a part of the LED-chip emits only IR radiation and another part only visible light, and the one part is separated from the other part in an asymmetric array"

Fig. 3 shows the beam pattern formed by an asymmetric array.

New FIG. 6A shows a LED-module (3) wherein the IR and the visible light emitting LEDs are arranged alternating in the asymmetric group arrangement

New FIG. 6B shows a LED-module (3) wherein one part is provided with only IR emitting and another part with visible light emitting LEDs.

Claim 29

The "multiple LED-modules, which are arranged in one plane"

FIG. 7 shows "multiple LED-modules, which are arranged in one plane" (3) on a "common carrier" (16)

Claim 30

The "the LED-modules contact each other"

FIG. 7 shows "multiple LED-modules, which are arranged in one plane" (3) on a "common carrier" (16) wherein the ""the LED-modules contact each other"

Claim 31

The "the LED-modules are releasably connected with each other"

FIG. 7 shows multiple LED-modules, releasably connected with each other.

Claim 32 and 36

The "a common carrier"

FIG. 7 shows multiple LED-modules arranged in one plane, on a common carrier

Claim 37

The "a common supplemental optical element"

FIG. 7 shows "a common supplemental optical element" (14).

All the Drawing Sheets have been numbered in accordance with 37 CFR 1.84(t).

It is therefore believed that the drawings show all the features. Furthermore, the BRIEF DESCRIPTION OF THE INVENTION and the DETAILED DESCRIPTION OF THE INVENTION of the specification has been amended accordingly in view of the amended drawings.

Accordinlgy, withdrawal of the objection to the drawings is respectfully requested.

Objection to the Abstract

In item 4 on page 4 of the Office action, the abstract has been objected to because of an informality.

A new abstract is attached.

Objection to the Claims

In item 5 on page 5 of the Office action, the claims have been objected to because of informalities. More specifically:

Claim 24, there is lack of antecedent basis for "the vehicle headlight beam" in line 3.

Claim 24 has been amended.

Claims 33, 34, 35, 36 and 37, there is lack of antecedent basis for "multiple LED-modules" in line 1.

The comments have been considered and the appropriate amendments have been made to the claims.

Formality Rejection of the Claims

In item 7 on page 5 of the Office action, claims 18 and 21-23 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

More specifically, the Office action states:

Claim 18 recites the limitation "the vertical angle" and "the horizontal angle" in lines 12-13. There is insufficient antecedent basis for this limitation in the claim. The applicant has not clearly described how "the vertical angle" and "the horizontal angle" being defined. Note that, an (geometric) angle is defined by two straight

lines, or two planes, or a straight line and a plane. In this particular case, is "the vertical angle of beam spread cp of the headlight" relative to the optical axis of the headlight, or relative to the road surface, or defined by the farthest-top-light-beam and the farthest-bottom-light - beam?

In response, Applicants

(a) amend claim 18 to recite "wherein the vertical angle of beam spread ϕ of the headlight is less than 5° and the horizontal angle of beam spread ϕ of the vehicle headlight lies in the range of less than 20°, said horizontal and vertical being relative to the earth, and

(b) submit that this amended language is clear on its face. Antecedent basis is required only where a newly introduced term makes the scope of the claim indeterminate. It is not required where the meaning is clear and unambiguous. For example, even though there may not be antecedent basis for a term such as "the center" of the circle, the meaning of the term is clear and unambiguous. In amended claim 18 it is believed that "the vertical beam spread ϕ of the headlight" and "the horizontal beam spread ϕ of the vehicle headlight" is further clarified by the language said horizontal and vertical being relative to the earth.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for the purpose of satisfying formal requirements, clarification, or are made solely for cosmetic reasons to clarify the claims. The changes are neither provided for overcoming the reference nor do they narrow the scope of the claims for any reason related to the statutory requirements for a patent.

Allowance of Claims

In item 18 on page 6 of the Office action, claims 18 and 21-38 will be held allowable, if rewritten or amended to overcome the rejection(s) under 35 U.S.C. § 112 set forth in this Office action.

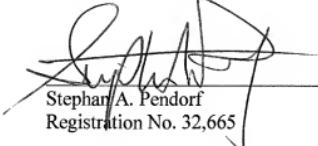
Applicants further appreciate and agree with the *statement of reasons for the indication of allowable subject matter*.

Should further issues remain prior to allowance, the Examiner is respectfully

requested to contact the undersigned at the indicated telephone number

The Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 16-0877.

Respectfully submitted,



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